

**Subgroup on Training and Credentialing**  
**WHO Family of International Classifications Implementation Committee**  
**March 31-April 2, 2003**  
**Washington, DC**  
**Summary of Meeting**

List of Participants:

Tyringa Ambrose, Medical Classification Specialist, CDC/NCHS  
Dr. Roberto Becker, Regional Advisor on ICD, PAHO  
Joyce Bius, Medical Classification Specialist, CDC/NCHS  
Amy Blum, Medical Classification Specialist, CDC/NCHS  
Kathy Brouch, Manager, IFHRO/AHIMA  
Dr. Cassia Buchalla, Assessor on ICD, WHO Collaborating Center for FIC in Portuguese  
Dr. Jaume Canela-Soler, Regional Advisor of Biostatistics, PAHO  
Ron Casey, Director, Population and Social Statistics, Australian Bureau of Statistics  
Donna Glenn, Branch Chief, MNCB, CDC/NCHS  
Marjorie Greenberg, Chief, Classifications and Public Health Data Standards Staff,  
CDC/NCHS  
Lars Age Johansson, Senior Statistician, Swedish National Board of Health and Welfare,  
Nordic Collaborating Center for the Classification of Diseases  
Professor Ruy Laurenti, Head, WHO Collaborating Center for FIC in Portuguese  
Traci Ramirez, Program Specialist, CDC/NCHS  
Dr. Cleone Rooney, UK WHO Collaborating Center for FIC Office for National Statistics  
Christine Sweeting, Data Quality & Classifications Advisor, NHS Information Authority  
Sue Walker, National Center for Classification in Health, Brisbane, Australia  
Patricia Wood, Mortality Classification Specialist, Health Statistics Division, Statistics  
Canada

March 31, 2003

Marjorie thanked the participants for coming despite the troubled world situation. The objective of the three-days of meetings was to progress work on an international training and credentialing program for mortality and morbidity coders who wish to demonstrate an internationally recognized proficiency in the use of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10).

After introductions and review of the agenda (Attachment 1), participants discussed the goals of an international credential for ICD-10 coding, including the retention of trained staff and career advancement. It was agreed that a large number of expert coders is not necessary for automated mortality systems but that those who are in the profession must be true experts. The need to bring new, young students into the field is considered essential. The participants agreed that the recommendation of the Subgroup is that trained coders, not physicians, code death certificates.

The scope of the credentialing process was discussed at length. After extensive deliberation it was determined that due to the lack of international standards for multiple cause and, to a lesser extent, morbidity coding, the initial credential will be limited to

underlying cause. Additionally, attention will need to be directed towards assuring that all users adhere to the rules for underlying cause as outlined in volume 2 of the ICD-10.

There was general agreement that it would be beneficial to have morbidity coding training programs include information on mortality coding and vice versa. It was also acknowledged that while some countries have automated procedures, there are important differences in using automated systems versus manual coding for mortality. Therefore, the deliverable for the Workgroup would focus on the manual coding processes, although much of the training also is relevant for coders in automated systems.

#### *Definitions, Skill Levels and Functions of Coders*

A full review of the document describing Definitions, Skill Levels and Functions of coders and nosologists was done. Each section of the document was revised as the discussions progressed. An important change to the document is a list of training needs for each type of coder. The document serves to identify the qualifications and tasks for each position and distinguishes between them as well. It also may be considered a record of core competencies. It was decided that credentialing will be limited to intermediate and advanced level coders, though the skills and functions of entry level coders and nosologists also will be included in the document. The revised draft document is Attachment 2.

For underlying cause of death, five stages of coder development were identified:

- preliminary level (defined as an optional stage for those countries using an automated system of coding),
- entry-level,
- intermediate level,
- advanced level and
- nosologist.

For multiple cause and morbidity, the stages established were entry-level to nosologist.

The definition of nosologist was defined as someone proficient in the rules of underlying cause with sufficient proficiency to suggest corrections to the rules and decision tables. It was agreed that a nosologist does not need to code as well as an advanced level coder. Consensus was reached that internationally agreed to decision tables would increase the comparability of international data.

#### *International Training and Credentialing Proposal*

The Subgroup revisited the original proposal to establish an international training and credentialing program for mortality and morbidity coders and nosologists. This proposal was endorsed by the International Federation of Health Records Organizations at its 13<sup>th</sup> Congress in 2000. Based on the day's dialogue, revisions were necessary. In particular, nosologist was removed from the proposal for the development of training materials and a credential. Statements were added as to consequences of not having a credentialing program. Three phases were agreed. The first international credential will be established

for underlying cause mortality coders. The second phase is the development of an international credential for morbidity coders reflecting the WHO standard for morbidity coding as defined in Volume 2 of ICD-10; it was decided that a separate phase for morbidity secondary conditions coding was not necessary. The third phase credentials the multiple cause mortality coders; however, work on this credential cannot commence until all participating countries approve international rules for multiple cause coding. It was recognized that the Mortality Reference Group can be a mechanism for bringing about consistency in multiple cause rules. As more and more countries use automated systems, it will be easier to modify internationally. The Subgroup identified that many countries do not use the WHO standards that already exist for mortality and morbidity coding as specified in Volume 2 of ICD-10. Attachment 3 contains the revised proposal.

#### April 1, 2003

The second day focused on a review of the previously distributed needs assessment questionnaires for mortality and morbidity coders and discussion of the available training materials for ICD-10. In addition, the summary of initial thoughts regarding the educational needs for coders developed at the 2002 Collaborating Centres meeting in Brisbane, Australia, was revisited. The majority of the day was spent on the development of a Core Curriculum for Underlying Cause of Death Coders.

#### *Needs Assessment Questionnaires*

The original purpose of the needs assessment questionnaires was to gather intelligence about the capacity, skills, and responsibilities of ICD-10 mortality and morbidity coders in member countries that have implemented ICD-10. Twenty-seven countries out of 99 responded. Preliminary findings, which were distributed at the 2002 meeting, were reviewed by the Subgroup. It had been agreed in the Brisbane meeting not to re-circulate the questionnaires until the Subgroup was sure exactly what information was needed. Members noted that we want to identify possible training needs internationally and also underpin why we're working on the training and credentialing package. Some possible suggestions for improvement of the questionnaire included:

- Having a more open-ended question such as "How is mortality coding handled in your country?" (However, this will complicate analysis)
- Ask number of records coded per year. It was noted that if a person codes while also being responsible for a number of other pressing duties, they may not be getting enough practice to become an advanced coder as identified in the Definitions, Skill Levels and Functions document.
- Possibly describe briefly the Subgroup's work and ask whether this effort, involving core curricula, core competencies and credentialing, would be useful for their country. This might also serve an educational function to help people see the need of a skilled coder as a separate position from physician.
- How much training is required to be a coder?
- Clarify areas that appear to be confusing or misunderstood such as with the educational requirements and in-service training.

- Ask about ongoing communication with coders, including information on updates to classification

### *Training Materials*

Each country represented at the meeting described currently available training materials for mortality and morbidity coding. The detailed descriptions are contained in Attachment 4. Some of the common characteristics of the mortality resources were the inclusion of some type of material on medical science, e.g., medical terminology and or anatomy in addition to an introduction to coding and how to code using the ICD-10 manuals, sample death certificates, and training reinforcement. The programs were two weeks in length. Some were paper based. Others had started as paper based but had moved to interactive CDs. Not all the materials presented are available in English. An inventory of training materials and capacity, completed by the Subgroup in 2001, currently resides on the Subgroup's home page:

[http://www.cdc.gov/nchs/about/otheract/icd9/nacc\\_subgroup.htm](http://www.cdc.gov/nchs/about/otheract/icd9/nacc_subgroup.htm) The group agreed that the Chair should contact developers of training products to update the information posted on the web site. This possibly can be done in conjunction with circulation of the proposed core curriculum. Additional questions should be added about whether the training materials include the latest international updates and how continuing education and professional development are conducted.

Donna Glenn of the United States offered the electronic CD's of Book 1 and Book 2 to anybody interested to review and submit comments. Also the 2c decision tables are available for review and editing to make them more internationally acceptable.

### *Educational Needs/Core Curriculum*

The Subgroup expanded and evaluated the listing of educational needs for coders and determined which item was appropriate for mortality or morbidity or both. Missing items were identified and added to the list. Those appropriate for coders who designate the underlying cause of death were grouped into categories, and bullet points under each were listed. This document evolved into a draft core curriculum, "Educational Needs for Underlying Cause of Death Coders" (see Attachment 5).

### April 2, 2003

Updated documents from the previous two days were distributed. Any further comments to the Definitions, Skill Levels, and Functions for both morbidity and mortality coders are due by the end of April. It was agreed that the Proposal to Establish an International Training and Credentialing Program and the Educational Needs document would be distributed at the April 7-10, 2003 International Collaborating Effort (ICE) on Automating Mortality Statistics meeting. The Definitions and Skills document would not be distributed at the meeting but would be mentioned.

### *Educational Needs/Core Curricula (continued)*

Participants agreed that the core educational needs of coders are similar for underlying cause, multiple cause and morbidity. The core curriculum for morbidity coders will

contain 80-90% of what was developed for underlying cause of death. The biggest addition will be in the area of the health record. Further work on the core curricula will be continued by individual members. Sue will work on the “How to code” section, Christine will work on privacy and confidentiality. Those on the Subgroup who work with morbidity coding - Sue, Christine, Kathy, Cassia, Roberto and Amy, will look at what needs to be added to the core curriculum for morbidity. Kathy will head the morbidity group and will contact Lori Moskal at CIHI and Gail Crooke at CHRA as well as other IFHRO members to seek their input on this document. Kathy also will review TENDON and Intercood to see which components of the core curriculum are missing from these training materials. Roberto will elaborate on uses of underlying causes of death data. This work needs to be completed by the end of May.

Once the core curricula are redrafted, the existing training materials will need to be evaluated against them to determine where revisions to resources may be necessary. The Subgroup considered the process by which a review could take place to determine if the existing materials meet the requirements listed. In addition, this analysis would identify what is available in each of the basic languages and identify where there may be gaps.

Because these core curricula describe entry-level requirements they could also be used as a standard for those countries where no educational program exists.

The Subgroup discussed the possibility of having one set of training materials organized by modules, packaged as a WHO product, and certified and made available by IFHRO. By having it in modules, this would allow those who wish to sit for the exam only to go through certain ones as necessary. The Subgroup concluded the format should be paper-based and made available by post. Internet based on-line availability was also suggested.

#### *Revision of Needs Assessment Questionnaires*

Sue and Ron agreed to revise the two Needs Assessment questionnaires based on the experience of surveys done in Australia and UK. Chris will assist with the morbidity questionnaire redesign. The questionnaires will be simplified and put into a format that will lend itself to data analysis. A draft revision will be completed by mid May for distribution to and approval by the entire Subgroup. By mid September the questionnaires will be translated and sent by Marjorie to the Regional advisors for distribution to every country where ICD is used, whether they have implemented ICD-10 or not.

#### *Emerging role of Clinical Coding*

Chris provided a description of the emerging role of clinical coding as a health informatics profession in the UK. The National Health Service (NHS) is setting up a “corporate” university due to launch fall of 2003. Its purpose is to support staff at every level in developing the right skills and experience to deliver excellent patient care and open up more opportunities for staff career development in the NHS. NHSU will offer nationally recognized learning programs that will be delivered at home, work or in a classroom. A range of learning methods from face-to-face to e-learning will be offered. One of the first programs to be developed is health informatics. Clinical coding has been

identified as one of the six areas within health informatics, and clinical coding professionals as key members of the health informatics team.

#### *Future meetings and agendas*

The meeting concluded with discussion of future agendas for the next Collaborating Centres meeting on October 20 - 25, 2003, in Cologne, Germany, and a follow-up meeting of the Subgroup in the spring of 2004 in conjunction with the next Mortality Reference Group meeting. Sue Walker will continue work on a brochure to publicize the work of the Subgroup and Collaborating Centres, as agreed at the Brisbane meeting. Donna Glenn offered the help of a technical writer on her staff to assist with the presentation of the document. The draft brochure will be reviewed at the Cologne meeting. Participants will be asked to bring sample exams to the Cologne meeting to begin work on drafting an international exam for underlying cause coding. This can be further progressed at the Spring 2004 meeting. Donna, Jaume and Chris agreed to write a paper for the Cologne meeting on how to develop an exam that will lead to a credential.

The target is to present all revised documents at the October 9-14, 2004 14<sup>th</sup> IFHRO Congress. Kathy Brouch has identified the following Action Items for IFHRO:

#### *IFHRO Action Items*

1. IFHRO agree to support this initiative by accepting the revised document “Establishment of an International Training and Credentialing Program for Mortality and Morbidity Coders” and agree to be the certifying or accrediting body. Particular areas of the document to discuss include:

- IFHRO will oversee the international coding certification program with the direct administration of the program being maintained by either the professional health information management association of a particular country or the participating country’s health ministry. It would also be possible, for those countries that wish, to establish a working association with a formal educational program of another country.
- Courses deemed essential for a professional mortality or morbidity coder as well as the annual examination could be certified by IFHRO. [Note: original proposal stated “would be certified”.]
- Formal examinations will be overseen by IFHRO on an annual basis for those persons who have completed the training program established by each person’s respective country.

2. Review the two Questionnaires for Needs Assessment and the preliminary findings. Provide any comments to Kathy by above stated deadlines. Determine if any assistance could be provided in the translation of the two questionnaires. The languages for the documents so far will be in English, French, Portuguese, and Spanish.

3. Begin discussions on IFHRO's role in the establishment of an International Training and Credentialing Program for Mortality and Morbidity Coders and what will be required to implement the process. Issues to consider:

- Does IFHRO agree with the Subgroup's approach of having one set of training materials organized by modules, packaged as a WHO product, and certified and made available by IFHRO?
- Should the materials be both paper and electronic?
- Which languages should the materials be available in?
- Who should provide the training using the approved materials?
- Who is going to develop the qualifying exams?
- What should the procedure be for administration of the exam?
- What should the certification state? WHO certified? IFHRO certified?

4. Further work with the Subgroup

- Availability of IFHRO Chair to meet with Marjorie at the end of the month. She will be in the Netherlands from April 26 - May 4 for a series of WHO meetings and would like the opportunity to get together.
- Identify additional IFHRO members to participate in the Subgroup
- Attendance at the next meeting in Cologne, which conflicts with AHIMA's National Convention (October 18 - 23, 2003).
- Sue Walker will present the revised documents to IFHRO's Executive Committee at the October 2004 IFHRO meeting and possibly an informational paper during the Congress.

**Agenda**  
**Subgroup on Training and Credentialing**  
**WHO Family of International Classifications Implementation Committee**  
**Working Meeting**  
**Hotel Washington, Caucus Room**  
**Washington, D.C.**  
**March 31 – April 2, 2003**

Monday, March 31

- |            |   |
|------------|---|
| 9:00 a.m.  | Welcome and Introductions<br>Review of agenda and meeting objectives  |
| 9:30 a.m.  | Discussion of scope (underlying vs. multiple cause, manual vs. automated systems, mortality vs. morbidity, etc.)  |
| 10:15 a.m. | Review and revision of documents on Definitions, Skill Levels and Functions for Certified Mortality Clinical Coders (Underlying Cause and Multiple Cause) and Certified Morbidity Clinical Coders |
| 10:45 a.m. | Coffee break  |
| 11:00 a.m. | Continuation of discussion of documents   |
| 12:00 p.m. | Lunch   |
| 1:00 p.m.  | Review, revision and re-circulation of Needs Assessment questionnaires  |
| 3:00 p.m.  | Coffee break  |
| 3:15 p.m.  | Review and revision of Proposal to Establish an International Training and Credentialing Program for Mortality and Morbidity Coders and Nosologists   |
| 4:15 p.m.  | Discussion of existing training materials   |
| 5:15 p.m.  | Adjourn   |
| 6:00 p.m.  | Group dinner  |



Tuesday, April 1

- 9:00 a.m. Revisit Initial Thoughts Regarding Educational Needs for Coders
- 9:45 a.m. Group topics into appropriate modules
- 10:45 a.m. Coffee break
- 11:00 a.m. Begin developing extended outline for each module for ICD-10 Underlying Cause Coders
- 12:00 p.m. Lunch
- 1:00 p.m. Continue work on outlines
- 3:00 p.m. Coffee break
- 3:15 p.m. Continue work on outlines
- 5:30 p.m. Adjourn

Wednesday, April 2

- 8:00 a.m. Resume work on outlines
- 10:00 a.m. Discuss next steps on reviewing and finalizing outlines
- 10:45 a.m. Coffee break
- 11:00 a.m. Discuss plans for progressing work on core competencies and curriculum for multiple cause coders
- 12:00 p.m. Lunch
- 1:00 p.m. Discuss plans for progressing work on core competencies and curriculum for morbidity coders
- 2:00 p.m. Presentation and discussion on emerging role of clinical coding as a health informatics profession
- 3:00 p.m. Coffee break
- 3:15 p.m. Discuss goals and agenda for October 2003 meetings in Cologne and second working meeting in Spring 2004

## DEFINITIONS, SKILL LEVELS, AND FUNCTIONS FOR UNDERLYING CAUSE OF DEATH CODER/NOSOLOGIST

The International Federation of Health Record Organizations (IFHRO) is working in conjunction with the World Health Organization's (WHO) Collaborating Centres for the Family of International Classifications Subgroup on Training and Credentialing to oversee credentialing examinations for medical coding personnel who wish to demonstrate an internationally recognized proficiency in the use of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Below are the definitions, skill levels and functions deemed necessary to sit for a credentialing examination in underlying cause coding. Each level does not necessarily apply to every type of system used. Various functions related to data preparation (e.g. data entry /data cleaning) may occur before coding is undertaken. At all levels, coders and nosologists adhere to the privacy principles of their country's respective ethical and legal framework.

### CODING OF UNDERLYING CAUSE OF DEATH

#### Definition:

An underlying cause mortality classification coder assigns the ICD-10 code for the underlying cause of death on death certificates based on the rules of the ICD-10 as specified in Volume 2. These data become the source from which national and international mortality statistics are tabulated and compared.

#### Entry-level coder (trainee)

An entry-level underlying cause coder has the ability to read and comprehend a standard death certificate and to recognize and select the proper ICD-10 code for the underlying cause of death, based on established conventions for use of the ICD. S/he must demonstrate a capacity for accurately verifying coded work in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must work towards a high rate of consistency and productivity. All work of a trainee should be subject to verification by a more experienced mortality classification coder before being released.

#### Intermediate level coder

An intermediate level underlying cause coder has the ability to read and comprehend a standard death certificate and to recognize and select the proper ICD-10 code for the underlying cause of death, based on established conventions for use of the ICD. S/he is able to determine the underlying cause of death on more complex death certificates than an entry-level coder. S/he must accurately verify coded work in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must maintain a high rate of consistency and productivity. Work of an intermediate level coder should be verified by an advanced coder periodically.

#### Advanced coder

An advanced level underlying cause coder possesses all of the skills of an intermediate level coder. An advanced level underlying cause coder has achieved a high level of expertise in the rules governing the assignment of the cause of death and in the interpretation and application of the ICD classification. S/he is able to train new mortality coders and participate in special projects and quality assurance on causes of death.

#### Nosologist

A nosologist has achieved a high level of expertise in the rules governing the assignment of the cause of death and in the interpretation and application of the current and previous revisions of the ICD classification. A nosologist should have an understanding of the intentions behind the ICD rules and guidelines. S/he is able to develop content for training programs, train new mortality coders and implement and oversee special projects on causes of death. Additionally, a nosologist has the ability to create statistical reports and analyses on cause-of-death data extracted from death certificate codes.

#### Skill levels (Qualifications):

##### Entry-level coder

An entry-level underlying cause coder should have the equivalent of a secondary school education and good reading skills. An entry-level coder must be able to consult source books and instructional manuals on the use of the ICD. S/he must be able to review medical books and technical journals to acquire familiarity with the etiology, symptoms and pathology of diseases.

*Training needs and professional development: Anatomy and physiology and medical terminology and use of the ICD classification and conventions for underlying cause coding.*

##### Intermediate level coder

An intermediate level underlying cause coder should have at least two years of experience coding death certificates. An intermediate level underlying cause coder should have successfully completed training in anatomy and physiology and medical terminology.

*Training needs and professional development: Medical science including etiology, symptoms and pathology of diseases.*

##### Advanced coder

An advanced underlying cause coder should be a credentialed intermediate level coder with at least five years of experience coding death certificates. S/he should demonstrate an ability to train others in ICD coding for underlying cause of death.

*Training needs and professional development: Quality assurance techniques and presentation skills.*

#### Nosologist

A nosologist has a detailed understanding of the history of ICD, its uses and its development. S/he has the ability to contribute to coding and classification policies and strategies at the national and international levels. A nosologist demonstrates expertise in application, interpretation and intentions of the classification.

*Training needs and professional development: Statistical analysis and report writing, epidemiology, presentation skills.*

#### Functions:

##### Entry-level coder

Assigns the appropriate ICD code for underlying cause of death for death certificates that contain legible entries and use traditional terminology, that contain all required information, and that use terms for which there are specified codes and rules in the ICD. The coding should be supervised or verified by an experienced coder. Identifies the need to query certifier for clarification.

##### Intermediate level coder

Assigns the appropriate ICD code and ensures the appropriate code is assigned by others for underlying cause of death for certificates made more complex by, for example, the sequencing of the reported causes of death, the nature or manner of death or incomplete or imprecise information. Identifies the need to query certifier for clarification. Evaluates work of and assists the entry-level coder. Intermediate level coders are able to work independently without direct supervision

##### Advanced coder

Assigns the appropriate ICD code and ensures the appropriate code is assigned by others for underlying cause of death for certificates made more complex by, for example, the sequencing of the reported causes of death, the nature or manner of death or incomplete or imprecise information. Trains others in the use of ICD classification and conventions in underlying cause. Develops, performs or contributes to quality assurance programs and other special projects using coded data. Identifies the need to query certifier for clarification. Intermediate level coders are able to work independently without direct supervision.

#### Nosologist

A nosologist responds to questions posed by peers nationally and internationally and is viewed as an expert with definitive knowledge of the procedures and techniques used to classify underlying cause of death.

S/he designs and conducts special studies that involve rule or code modifications that could influence changes in ICD coding practices, including updates and revisions to the

classification, and national and international statistics. Such studies include projects where the comparability of classification between countries is examined or where different versions of the ICD or changes made to the classification are evaluated. These projects require recognition of problems and consistent interpretation of new and highly technical instructions for determining underlying cause of death. The nosologist consults clinical and other experts, including WHO Family of International Classifications Collaborating Centres, about the definition, recognition and coding of non-indexed conditions.

## DEFINITIONS, SKILL LEVELS, AND FUNCTIONS FOR MULTIPLE CAUSE OF DEATH CODER/NOSOLOGIST

The International Federation of Health Record Organizations (IFHRO) is working in conjunction with the World Health Organization's (WHO) Collaborating Centres for the Family of International Classifications Subgroup on Training and Credentialing to oversee credentialing examinations for medical coding personnel who wish to demonstrate an internationally recognized proficiency in the use of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Below are the definitions, skill levels and functions deemed necessary to sit for a credentialing examination in multiple cause of death coding. Each level does not necessarily apply to every type of system used. Various functions related to data preparation (e.g. data entry /data cleaning) may occur before coding is undertaken. At all levels, coders and nosologists adhere to the privacy principles of their respective country's ethical and legal framework.

### CODING OF MULTIPLE CAUSE OF DEATH

#### Definition:

A multiple cause of death coder assigns the ICD-10 codes for the conditions listed on the death certificates based on the rules of the ICD-10 and internationally-agreed rules on multiple cause coding. These data become the source from which national and international mortality statistics are tabulated and compared.

#### Entry-level coder (trainee)

An entry level multiple cause coder has the ability to read and comprehend a standard death certificate and to recognize and select the proper ICD-10 code(s), for the conditions listed on the certificate based on established conventions for use of the ICD. S/he must demonstrate a capacity for accurately verifying coded work in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must work towards a high rate of consistency and productivity. All work of a trainee should be subject to verification by a more experienced mortality classification coder before being released.

#### Intermediate level coder

An intermediate level multiple cause coder has the ability to read and comprehend a standard death certificate and to recognize and select the proper ICD-10 code(s) for the conditions listed on the certificate based on established conventions for use of the ICD. S/he is able to assign codes on more complex death certificates than an entry-level coder. S/he must demonstrate a capacity for accurately verifying coded work in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must maintain a high rate of consistency and productivity. Work of an intermediate level coder should be verified by an advanced coder periodically.

#### Advanced coder (Nosologist)

An advanced level multiple cause coder possesses all of the skills of an intermediate level coder. An advanced level underlying cause coder has achieved a high level of expertise in the rules governing the assignment of the cause of death and in the interpretation and application of the ICD classification. S/he is able to train new mortality coders and participate in special projects and quality assurance on causes of death.

#### Nosologist

A nosologist has achieved a high level of expertise in the rules governing the assignment of the cause of death and in the interpretation and application of the current and previous revisions of the ICD classification. A nosologist should have an understanding of the intentions behind the ICD rules and guidelines. S/he is able to develop content for training programs, train new mortality coders and implement and oversee special projects on causes of death. Additionally, a nosologist has the ability to create statistical reports and analyses on cause-of-death data extracted from death certificate codes.

#### Skill levels (Qualifications):

##### Entry-level coder

An entry level multiple cause coder should have the equivalent of a secondary school education and good reading skills. An entry-level coder must be able to consult source books and instructional manuals on the use of the ICD. S/he must be able to review medical books and technical journals to acquire familiarity with the etiology, symptoms and pathology of diseases.

*Training needs and professional development: Anatomy and physiology and medical terminology and use of the ICD classification and conventions for multiple cause coding.*

##### Intermediate level coder

An intermediate level multiple cause coder should have at least two years of experience coding death certificates. An intermediate level multiple cause coder should have successfully completed training in anatomy and physiology and medical terminology.

*Training needs and professional development: Medical science including etiology, symptoms and pathology of diseases.*

##### Advanced coder

An advanced multiple cause coder should be a credentialed intermediate level coder with at least five years of experience coding death certificates. S/he should demonstrate an ability to train others in ICD coding for multiple cause of death.

*Training needs and professional development: Quality assurance techniques and presentation skills.*

##### Nosologist

A nosologist has a detailed understanding of the history of ICD, its uses and its development. S/he has the ability to contribute to coding and classification policies and strategies at the national and international levels. A nosologist demonstrates expertise in application, interpretation and intentions of the classification.

*Training needs and professional development: Statistical analysis and report writing, epidemiology, presentation skills.*

### Functions:

#### Entry-level coder

Assigns the appropriate ICD codes for multiple causes of death for death certificates that contain legible entries and use traditional terminology, that contain all required information, and that use terms for which there are specified codes and rules in the ICD. The coding should be supervised or verified by an experienced coder. Identifies the need to query certifier for clarification.

#### Intermediate level coder

Assigns the appropriate ICD codes and ensures the appropriate codes are assigned by others for multiple causes of death for certificates made more complex by, for example, the sequencing of the reported causes of death, the nature or manner of death or incomplete or imprecise information. Identifies the need to query certifier for clarification. Evaluates work of and assists the entry-level coder. Intermediate level coders are able to work independently without direct supervision

#### Advanced coder

Assigns the appropriate ICD codes and ensures the appropriate codes are assigned by others for multiple cause of death for certificates made more complex by, for example, the sequencing of the reported causes of death, the nature or manner of death or incomplete or imprecise information. Trains others in the use of ICD classification and conventions in multiple cause coding. Develops, performs or contributes to quality assurance programs and other special projects using coded data. Identifies the need to query certifier for clarification. Intermediate level coders are able to work independently without direct supervision.

#### Nosologist

A nosologist responds to questions posed by peers nationally and internationally and is viewed as an expert with definitive knowledge of the procedures and techniques used to classify multiple causes of death.

S/he designs and conducts special studies that involve rule or code modifications that could influence changes in ICD coding practices, including updates and revisions to the classification, and national and international statistics. Such studies include projects where the comparability of classification between countries is examined or where different versions of the ICD or changes made to the classification are evaluated. These projects require recognition of problems and consistent interpretation of new and highly



technical instructions for determining multiple causes of death. The nosologist consults clinical and other experts, including WHO Family of International Classifications Collaborating Centres, about the definition, recognition and coding of non-indexed conditions.

## DEFINITIONS, SKILL LEVELS, AND FUNCTIONS FOR MORBIDITY CODER

The International Federation of Health Record Organizations (IFHRO) is working in conjunction with the World Health Organization's (WHO) Collaborating Centres for the Family of International Classifications Subgroup on Training and Credentialing to oversee credentialing examinations for medical coding personnel who wish to demonstrate an internationally recognized proficiency in the use of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Below are the definitions, skill levels and functions deemed necessary to sit for a credentialing examination in morbidity coding. This international credential reflects the use of ICD-10 and the WHO standard for morbidity coding, as defined in Volume 2 of ICD-10. It is recognized that some countries use clinical modifications of ICD-10, already have their own national credentialing exams that require different pre-requisites and may use different definitions for selection of diagnoses to code and analyze; this complicates efforts to achieve international standardization in morbidity data. At all levels coders and nosologists adhere to the privacy principles of their country's respective ethical and legal framework.

### CREDENTIAL FOR CODING OF MORBIDITY

#### Definition:

A morbidity clinical coder accurately extracts clinical data from a health record, assigns the correct ICD-10 code for each condition and selects the main condition.

#### Entry-level coder (trainee)

An entry-level morbidity coder has the ability to read and comprehend a standard health record and to recognize and select the proper ICD-10 code(s), for the conditions listed in the health record based on established conventions for use of the ICD. S/he must demonstrate a capacity for accurately assigning codes in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must work towards a high rate of consistency and productivity. S/he will establish and record the correct sequence of codes relating to a single episode of health care and record these accurately and completely in a timely manner. All work of a trainee should be subject to verification by a more experienced morbidity classification coder before being released.

#### Intermediate level coder

An intermediate level morbidity coder has the ability to read and comprehend a standard health record and to recognize and select the proper ICD-10 code(s) for the conditions documented in the record based on established conventions for use of the ICD. S/he is able to assign codes on more complex cases from more complex records than an entry-level coder. Complicated health records and case notes will require significant experience and abstracting skills to accurately identify and assign the correct main

condition and relevant co-morbidities. S/he must demonstrate a capacity for accurately verifying coded work in compliance with complex instructions and rules. S/he exerts a high degree of discipline in adapting to the technical requirements of various classification activities and procedures. S/he must maintain a high rate of consistency and productivity. Work of an intermediate level coder should be verified by an advanced coder periodically.

#### Advanced coder

An advanced level morbidity coder possesses all of the skills of an intermediate level coder. An advanced level morbidity coder has achieved a high level of expertise in the rules governing the assignment of ICD codes and in the interpretation and application of the ICD classification. S/he is able to train new morbidity coders and implement and oversee special projects and quality assurance on morbidity data.

#### Nosologist

A nosologist has achieved a high level of expertise in the ICD rules and in the interpretation and application of the current and previous revisions of the ICD classification. A nosologist should have an understanding of the intentions behind the ICD rules and guidelines. S/he is able to develop content for training programs, train new morbidity coders and implement and oversee special projects on coded data. Additionally, a nosologist has the ability to create statistical reports and analyses on morbidity data extracted from health records.

#### Skill levels (Qualifications):

##### Entry-level coder

An entry-level morbidity coder should have the equivalent of a secondary level education and good reading skills. An entry-level coder must be able to consult source books and instructional manuals on the use of the ICD. S/he must be able to review medical books and technical journals to acquire familiarity with the etiology, symptoms and pathology of diseases.

*Training needs and professional development: Anatomy and physiology and medical terminology and use of the ICD classification and conventions. Ability to read and interpret a health record.*

##### Intermediate level coder

An intermediate level morbidity coder should have at least two years of experience coding health records. An intermediate level morbidity coder should have successfully completed training in anatomy and physiology and medical terminology.

*Training needs and professional development: Medical science including etiology, symptoms and pathology of diseases.*

##### Advanced coder

An advanced morbidity coder should be a credentialed intermediate level coder with at least five years of experience coding health records. S/he should demonstrate an ability to train others in ICD coding for morbidity and to supply advice as required.

*Training needs and professional development: Quality assurance techniques and presentation skills.*

#### Nosologist

A nosologist has a detailed understanding of the history of ICD, its uses and its development. S/he has the ability to contribute to coding and classification policies and strategies at the national and international levels. A nosologist demonstrates expertise in application, interpretation and intentions of the classification. S/he understands the different uses of morbidity data which may require different approaches to coding and selection rules.

*Training needs and professional development: Statistical analysis and report writing, epidemiology, presentation skills.*

#### Functions:

##### Entry-level coder

Assigns codes in the proper sequence, or ensures the appropriate ICD codes for records coded by others, of the conditions listed in the health record that contain legible entries and use traditional terminology, that contain all required information, and that use terms for which there are specified codes and rules in the ICD. The coding should be supervised or verified by an experienced coder. An entry level coder is able to work in all health care settings. The coder should be able to identify when further guidance/assistance is needed in assigning the correct code. The entry-level coder should be able to research unfamiliar terms and concepts and seek confirmation from an experienced coder.

##### Intermediate level coder

Assigns codes in the proper sequence, or ensures the appropriate ICD and interventions codes for records coded by others, of the conditions listed in the health record made more complex by, for example, the nature of injury or illness or incomplete or imprecise information. Evaluates work of and assists the entry-level coder. Intermediate level coders are able to work independently without direct supervision. An intermediate level coder is able to work in all health care settings.

##### Advanced coder

Assigns codes in the proper sequence, or ensures the appropriate ICD codes for records coded by others, of the conditions listed in the health made more complex by, for example, the nature of injury or illness or incomplete or imprecise information.. Trains others in the use of ICD classification and conventions in morbidity coding. Develops, performs or contributes to quality assurance programs and other special projects using

coded data. Advanced level coders are able to work independently without direct supervision. An advanced coder is able to work in all health care settings.

#### Nosologist

A nosologist responds to questions posed by peers nationally and internationally and is viewed as an expert with definitive knowledge of the procedures and techniques used to classify morbidity data. S/he designs and conducts special studies that involve rule or code modifications that could influence changes in ICD coding practices, including updates and revisions to the classification, and national and international statistics. Such studies include projects where the comparability of classification between countries is examined or where different versions of the ICD or changes made to the classification are evaluated. These projects require recognition of problems and consistent interpretation of new and highly technical instructions. The nosologist consults clinical and other experts, including WHO Family of International Classifications Collaborating Centres, about the definition, recognition and coding of non-indexed conditions.

April 2, 2003

**Proposal to Establish an International Training and Credentialing Program  
for Mortality and Morbidity Coders**

The International Collaborative Effort on Automating Mortality Statistics requested assistance from the World Health Organization (WHO) Collaborating Centres for the Family of International Classifications (FIC) on the establishment of an international training and credentialing program for mortality coding. The need for trained mortality coders for both automated and manual systems is significant. Additionally, advanced coders and nosologists are needed to train and qualify new mortality coders and to implement special projects and maintain and enhance automated systems. With the majority of mortality coders today having learned their skills on the job and many being close to retirement, there is no structure in place to assure that new coders will be available to continue the profession.

Due to the current lack of status of this profession, the low salaries and the few number of positions available, there is little interest in those looking for health care careers to think of mortality coding as a profession. This raises the concern that the collection of mortality data in the future may be compromised. Using clinicians to code their own records is not an acceptable alternative, because it is expensive and may result in inconsistent data. Use of “pick lists” also must be discouraged and would degrade the quality of mortality data.

The need for international training and credentialing of mortality coders was identified as an action item by the network of WHO Collaborating Centers at their October 1999 annual meeting. The WHO Subgroup on Training and Credentialing also concurred that an international training and credentialing program for morbidity coding would be beneficial for the international collection and comparison of morbidity data. There are well established morbidity training programs leading to University level degrees in a few countries. But for most countries, no established training program exists even with the increasing importance of morbidity coding.

Finally, it has been identified that many countries do not use the WHO standards for mortality and morbidity coding, as specified in Volume 2 of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). International training and credentialing could address this problem.

It is being proposed that an international training and credentialing program for mortality and morbidity coding be established under the auspices of an existing non-governmental organization. There are significant differences in using automated systems versus manual coding for mortality. Also, there is different logic for multiple cause coding versus underlying cause selection. Similar differences exist between selection of the main condition versus listing of secondary conditions for morbidity coding. Due to these

differences in approach to the different types of coding it is being proposed that the international training and credentialing be established in phases.

The initial phase will consist of training and credentialing for underlying cause of death coding. The second phase will be the establishment of training and credentialing for morbidity coding. The third phase will focus on multiple cause coding but cannot be established until international rules for multiple cause coding are approved by all participating countries. Definitions, Skill Levels and Functions have been developed by the WHO Subgroup on Training and Credentialing for all three categories of coders at the entry level, intermediate level, and advanced level, as well as for nosologists. Credentialing would be for coders at the intermediate and advanced levels.

The following model is being proposed for all three phases:

- The International Federation of Health Record Organizations (IFHRO) will oversee the international credentialing program with the direct administration of the program being maintained by either the professional health information management association of a particular country or the participating country's health ministry. It would also be possible, for those countries that wish, to establish a working association with a formal educational program of another country.
- Courses deemed essential for a professional mortality or morbidity coder, as well as the annual examination, could be certified by IFHRO.
- Those individuals who are currently working as mortality and morbidity coders would be eligible to sit for the credentialing examination regardless of their educational background.
- For underlying cause, the training program will be based on existing training materials for the ICD-10 that have been designed for the selection of underlying cause developed by the U.S. National Center for Health Statistics, the United Kingdom Collaborating Center (TENDON), Australia, as well as relevant training materials developed by other countries. These training materials should incorporate internationally-approved updates to the classification.
- For main condition coding the training program will be based on the rules and conventions of Volume 2 of the ICD-10.
- For multiple cause, the training program will be based on the rules established by the international community prior to the implementation of this phase.
- All countries electing to participate in a credentialing program and accept credentialed mortality and morbidity coders as professionals responsible for the quality of the data collected on death certificates and medical records must adhere to the same set of coding rules and conventions.
- For those countries with an established health information management association, the credentialing should be offered as an extension to existing college degree or similar programs. The concept of having at least one trained mortality coder in each hospital or nursing home to assist the physician with the completion of the death certificates and validate the accuracy of the death certificate for all patients who die in the hospital or nursing home should be developed. This may

encourage persons interested in the health information management field to pursue the additional mortality coder credential, could improve the quality of death certificate data, and will provide a needed supply of trained mortality coders for future national and international needs.

- For countries without an established health information management association, the credentialing should be considered an essential qualification for those individuals selected to maintain death certificate data for the country.
- Formal examinations will be overseen by IFHRO on an annual basis for those persons who have completed the training program established by each person's respective country. IFHRO will award the international credential.

An earlier version of this proposal was approved at the 2000 meeting of IFHRO.

April 2, 2003



Members of the Sub-group were each given an opportunity to describe their current training packages; a brief synopsis of each follows.

**UK:** **Mortality:** Students use TENDON, which is now Window-based on CD-rom. It needs some minor editing to reflect updates such as those made to Rule 3.

**Morbidity:** Currently the training materials are paper –based although it is envisaged that training materials will be based on CD-rom; including the clinical coding Instruction Manual and Basic Anatomy and Physiology manual. The 4-step coding process has already been developed on CD-rom and has been successfully piloted. In addition, there is a Mental Health Instruction manual (paper-based) and specialty workshop material e.g., Obstetrics that is available on CD-rom. A pilot on e-learning is also currently underway in England. All training is undertaken by a dedicated team of trainers and tutors according to UK national standards. A bi-monthly publication, the *Data Quality Review*, is also produced for morbidity coders and information staff. It includes articles on health informatics and issues related to clinical coding and an insert called the *Coding Clinic*, where it provides questions and answers for commonly asked questions and also more difficult coding queries. Once published in the *Coding Clinic* – the answers contained become de facto a UK national standard.

**Brazil:** The training materials are in Portuguese, except for the Intercode program which is in 4 languages and can be used for both morbidity and mortality.

**Morbidity:** The training is one-week long and is done for multipliers who will go out and train others, i.e. train the trainer course. Long distance training was attempted, but there were software problems that can hopefully be resolved. There is material on the Internet that shows the importance of data, compares statistics, contains examples and goes through chapter by chapter. It is about 40 hours.

**Mortality:** A number of materials are distributed for the mortality coder, some of which are:

- History of ICD
- Nomenclature and Classification
- Abbreviated listing of all ICD Revisions
- ICD-10 Manual with 40 examples of actual Brazilian deaths.
- Exercise manual containing 100 additional examples
- Booklet with 50 or 60 death certificates
- Acronym listing handout

This is a 2-week course from 8:00 – 5:30 with 1 ½ hour lunch break. They prefer to have students who have some previous medical knowledge. For continuing education, once or twice a year meetings are held for 3-4

days where the 35-40 multipliers bring difficult records to discuss together. In addition, a bulletin is published 3-4 times a year about coding, and complex cases are presented with solutions; this is for morbidity as well as mortality.

- Canada :** **Morbidity:** This is done in hospitals by staff also trained in health record management. There is an electronic package for this.  
**Mortality:** Statistics Canada handles mortality training using materials from the NCHS Training Office. It is requested that students receive a medical terminology course on their own in addition to completing a Book 1 Anatomy and Medical Terminology and Book 2 Intro to ICD Coding as a pre-classroom assignment. Students are given instruction in general coding before beginning the actual Underlying Cause Rules.
- USA:** **Morbidity:** Morbidity training is still based on the ICD-9-CM and can be offered at a technical school level or in the form of a program offered by AHIMA as an online course. There are 4 clusters of 3 courses each; students are given 15 weeks to complete each cluster of courses for a total time of approximately 180 hours.  
**Mortality:** Students are required to complete Book 1 Anatomy and Medical Terminology and Book 2 Intro to ICD Coding before attending class. They are also required to successfully complete a pre-classroom quiz on each Book. In-class, the students receive the 2a Instruction Manual, which contains the underlying cause instructions and the 2c Instruction Manual, which contains the decision tables. The course is 2 weeks, and students receive a certificate of completion at the end. For multiple cause training, students receive a 2b Instruction Manual containing the instructions for multiple cause coding. For this course there are post-classroom materials in the form of Training Decks and a large Qualification Deck that must be completed successfully in order for a student to be qualified to code multiple cause data.
- Australia:** **Mortality:** Training is done in-house, on the job. ICD and NCHS Manuals are used, specific to Australia such as querying, etc. There is also information provided to doctors to demonstrate how to complete a death certificate and also a quick-reference sheet as well. The system is all paper-based.  
**Morbidity:** There are differences in the new vs experienced coder training. The new coder training can be handled at the university level. Training of experienced coders is the responsibility of the agency. The ICD-10-AM is updated every two years, and there is pre-implementation training to identify the changes. Trainers are trained and sent out. There are also voluntary post-implementation workshops available. Doctors will present the medical context of any new entries and then the coding perspective of the medical information is presented. Booklets containing clinical updates are available.

**International:** Training is conducted 2 or 3 times per year mainly for people who have never coded or who have coded using ICD-9. Training materials are tailored for the needs of the particular country. A field trip to a health facility nearby is planned, and the ICD Volumes are covered chapter by chapter. There have been requests for underlying cause training but no requests yet for multiple cause. There is also a coding quality package available where real records are incorporated. The training is all paper-based. The How to Code Workbook and printout of the PowerPoint slides are available for the students.

**Sweden:** **Mortality:** Recently, for the first time since 1989 new coders have been hired. An attempt has been made to write coding manuals, the first containing Volume 2 guidelines and is about 50 pages and the 2<sup>nd</sup> containing Swedish coding guidelines and is about 100 pages. A Test Deck demonstrates the main points. It is a 2-week course and is followed by another test deck of about 2500 examples, which has an error rate of 2.5%. Students usually have some previous medical background. Coders do 1/3 of the cases manually and compare to the automated system; this conducts a 2-way check for both the system as well as keeping the coder in practice. The UK noted that they do a 10% sample for the same reasons.

**Morbidity:** Medical secretaries receive formal training in classification.

**PAHO:** Intercode is a multi-language electronic program used by both morbidity and mortality coders; it will be demonstrated at the ICE meeting the following week. It is a self-instruction program that covers a number of items such as a glossary of medical terms, general overview of anatomy and multiple choice questions with answers and comments. It roughly takes a coder a minimum of 2-3 days to complete and is also effective when used as a refresher. There is not an expensive price tag attached, for developing countries about \$20.

## **EDUCATIONAL NEEDS FOR UNDERLYING CAUSE OF DEATH CODERS**

Availability of resource materials and essential references needed for coding

- Full sets of the ICD-10
- Medical dictionary
- Training materials
- Drug references
- Abbreviation list
- Contact person to ask questions

Knowledge of basic medical science

- Medical terminology
- Basic anatomy
- Basic physiology
- Etiology
- Signs and symptoms
- Basic pathology

Privacy and confidentiality principles

Uses of coded data

- Context in which coding is done
- Purposes for coding
- Statistical outputs
- Evidence for health policy
- Planning and evaluating health services and programs
- Medical and public health research

Users of coded data

- Epidemiologists
- Statisticians
- Program managers
- Actuaries
- Policy makers
- Researchers
- Demographers
- Funeral directors
- International organizations (World Health Organization, United Nations)

The International Classification of Diseases (ICD)

- Nomenclature and Classification
- International context

- Standardization and comparability
- History of the classification
- Structure
- Updating mechanisms of classification

#### Source documents

- Death certificate or equivalent
- Police reports, coroner reports and other reports
- Quality of source documents

#### How to code

- How to use different volumes of the ICD
- Rules and conventions for coding
- Concept of underlying cause of death
  - Definition
  - International format of medical certificate of cause of death
- Appropriate exercises in selection and coding

#### Quality Assurance

- Querying processes (e.g., sequencing on certificate, what and how to query)
- Editing and validation
- Responsibility for data quality
- Processes for accessing expert advice

April 1, 2003